

What is claimed is:

1. A container for holding a fluidic biological sample while undergoing nucleic acid amplification, the container comprising:

5 a receiving portion having a first volume, the receiving portion being adapted to receive the biological sample therein; and

a reaction portion, the reaction portion being in fluidic communication with the receiving portion such that the biological sample placed in the receiving portion can travel to the reaction portion, the reaction portion having an internal  
10 volume not greater than a second volume, the second volume being less than the first volume and not greater than 1 milliliter and comprised of material having a thermal conductivity in the range from about 20 to about 35 in accordance with the formula:

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$$\left( \frac{\text{cal cm}}{\text{cm}^2 \text{s degree C}} \right) \times 10^4$$

2. A container as defined in claim 1 wherein the receiver portion comprises a plastic material.

20 3. A container as defined in claim 1 wherein the receiver portion comprises a plastic material formed in a funnel structure.

4. A container as defined in claim 1 further comprising a stopper, the stopper being removably inserted into the receiving portion.

25 5. A container as defined in claim 1 wherein the second volume is not greater than about 10  $\mu\text{l}$ .

6. A container as defined in claim 1 wherein at least a portion of the reaction portion is transparent.

30 7. A container for holding a fluidic biological sample, the container comprising:

a reservoir having a first volume, the reservoir adapted to receive the biological sample therein; and

a reaction portion, the reaction portion being in fluidic communication with the reservoir such that the biological sample placed in the reservoir can travel to the reaction portion, the reaction portion having an internal volume not greater than a second volume, the second volume being not greater than 10,000  $\mu\ell$  and comprised of material having a thermal conductivity in the range from about 20 to about 35 in accordance with the formula:

$$\left( \frac{\text{cal cm}}{\text{cm}^2 \text{s degree C}} \right) \times 10^4$$

8. The container of claim 7 wherein the second volume is not greater than 1 milliliter.

9. The container of claim 8 wherein the second volume is between about .01  $\mu\ell$  to about 100  $\mu\ell$ .

10. The container of claim 7 wherein the reaction portion comprises a capillary tube having a 0.8 mm inner diameter and a 1.0 mm outer diameter.

11. The container of claim 10 wherein reservoir further comprises a funnel shaped portion and the capillary tube comprises a sealed first end and a flared second end, the flared second end for receiving the funnel shaped portion of the reservoir.

12. The container of claim 11 wherein the sealed first end comprises a flat tip.

13. The container of claim 7 wherein the reaction portion comprises a flat capillary, wherein a reaction space is defined by two spaced-apart plates.

14. The container of claim 7 wherein the reaction portion has a volume-to-surface ratio of less than 1 mm.

15. The container of claim 14 wherein the reaction portion has a volume-to-surface ratio of less than 0.25 mm.

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16. The container of claim 7 wherein at least a portion of the reaction portion is comprised of a material that is optically transmissible for light having a wavelength of about 400-800 nm.

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17. The container of claim 7 further comprising a stopper for sealing the sample within the container.

18. The container of claim 17 wherein the stopper is formed to fit at least partially within the reservoir.

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